Abstract

A method and apparatus for cooling a hat source configured along a lane. The heat exchanger comprises an interface layer that perform thermal exchanger with the heat source and configured to pass fluid from a first side to a second side. The manifold layer comprises a first layer in contact with the heat source and has an appropriate thermal conductivity to pass heat to the interface layer. The manifold layer further comprises a second layer coupled to the first layer and in contact with the second side fo the interface layer. The first layer comprises a recess area having a heat conducting region in contact with the heat exchanging layer. The first layer includes at least one inlet and/or outlet port. The second layer includes at least one inlet and/or outlet port. At least one inlet and/or outlet port is positioned substantially parallel or perpendicular with respect to the plane.